



**SHERWIN-WILLIAMS.**

**COPY**

THE SHERWIN-WILLIAMS COMPANY  
Environmental, Health & Regulatory Services  
101 Prospect Avenue NW  
Cleveland, Ohio 44115-1075  
Facsimile: (216) 566-2730

March 27, 2006

Mr. Raymond Klimcsak  
United States Environmental Protection Agency  
290 Broadway, 19<sup>th</sup> floor  
New York, NY 10007

**RE: Sherwin-Williams Co. Gibbsboro Sites  
Clarification of Items Related to XRF Screening at Hilliard Creek**

Dear Mr. Klimcsak:

You requested in your March 8, 2006 note to me clarification of several items discussed in our March 6, 2006 letter requesting approval to use X-Ray Fluorescence (XRF) as a screening tool during the supplemental sampling that will be conducted in and along Hilliard Creek. Your note requested clarification of our proposal to modify the sample collection locations for each of the additional 200-foot transects along Hilliard Creek and of four specific items contained in our March 6, 2006 letter.

**Sample Collection Locations and Depths**

The approved November 2004 Work Plan (Work Plan) for the Remedial Investigation (RI) of Hilliard Creek and the other Sherwin-Williams Gibbsboro sites specifies the locations, depths and analytical parameters for the soil and sediment samples that will be collected during the RI. Specific to Hilliard Creek, and as noted in your note to me, the Work Plan specifies that samples will be collected every five feet over the first 20 feet (beginning at the stream bank) of each transect. After the first 20 feet, samples would be collected at 50-foot intervals until the presumed boundary of the flood plain is reached.

Samples were collected as per the Work Plan during the Strategic Sampling of Hilliard Creek. As presented in our November 2005 letter and discussed at our December 7, 2005 meeting, the concentrations of constituents of potential concern (COPCs) in samples obtained from the five-foot intervals in that first 20 feet were very similar. Although some variability was observed, there were no apparent concentration gradients and concentrations of individual COPCs, if found above screening criteria in the sample closest to the stream bank, did not attenuate to our screening criteria within that first 20 feet. Therefore, we proposed to replace the samples collected at the five-foot intervals with a single sample, collected at the top of the stream bank.

As you identified in your note, several terms were used in both our November 2005 and March 2006 letters, including "centerline", "top of stream bank", "shoulder of stream bank" and "perimeter". For purposes of further discussion of both our proposed sample locations and use of XRF for soil screening, the following two definitions are provided:

1. "Top of stream bank": The locations on each side of Hilliard Creek immediately adjacent to the stream channel.
2. "Perimeter": The locations at the boundary of the flood plain.

Figure 1 presents a plan view of the proposed sample locations. As shown, an initial boring would be installed at the top of the stream bank, followed by a second boring at a distance of 50 feet from the first. Samples would then be obtained every 50 feet until the boundary of the flood plain is reached (the perimeter sample). As we discussed at the December 7, 2005 meeting, there will be no loss of knowledge regarding the concentration or extent of the COPCs, as the information obtained from the five-foot interval samples was so similar.

Based on the results of the Strategic Sampling, we are also proposing to collect samples from an additional depth interval in the borings installed at the top of the stream bank. (This item is also discussed in response to your specific question #2.) As you know, the Work Plan provides direction regarding the number and depths of samples collected from each boring based on the depth at which ground water is encountered. Along Hilliard Creek:

- Where ground water is encountered at a depth of 2 feet or greater, the deepest sampling interval is the 6 inches immediately above the water table.
- Where ground water is found at a depth of less than two feet, the deepest sampling interval is the 6 inches immediately below the water table.

We are proposing to extend these deeper sampling intervals by two feet in the borings installed at the top of the stream bank. Therefore, where ground water is encountered at a depth greater than two feet, we will extend our boring two feet below the water table and collect a sample from the 18 – 24 inch interval below the water table. Where ground water is encountered at a depth of less than two feet, we will extend the boring to a depth of 30 inches below the water table and collect a sample from the 24 – 30 inch interval below the water table. The additional sampling is illustrated on Figure 2.

As discussed in the next section of this letter, these deeper samples will be analyzed with the XRF unit prior to being transported to an analytical laboratory to determine whether lead or arsenic is present at a concentration greater than the selected screening criterion. If the XRF analysis finds either lead or arsenic at a

concentration greater than the screening criterion, a deeper sample will be obtained from the next two foot interval.

### **Specific Responses**

You requested clarification of four specific items included in our March 6, 2006 letter. These are provided below.

#### **1. Purpose of XRF Screening**

The purpose of using a portable XRF unit to screen the deepest samples from the Borings installed at the top of the stream bank and from the perimeter samples is so we can immediately collect samples from a deeper interval and/or a greater horizontal distance from Hilliard Creek without the need to remobilize.

#### **2. Number of Samples from "Centerlines" and Rationale for Selection**

The term "centerlines" should more accurately be stated as the "top of stream bank". As discussed above, in each transect borings will be installed in locations at the top of each stream bank. Therefore, all transects will have borings installed in two "top of stream bank" locations, one on either side of the stream, as reflected in Figures 1 and 2.

The top of stream bank boring locations were selected for an additional sampling depth interval based on the results of the Strategic Sampling. The screening criteria for lead and arsenic were generally not achieved at the deepest sampling interval in the borings closest to Hilliard Creek (the five-foot interval samples). Therefore, we determined that we would increase the deepest sampling depth in the borings installed at the top of stream bank in an attempt to achieve the screening criteria. Also, these deeper samples will be analyzed by XRF and if the results show that lead or arsenic (or another metal) is present at a concentration above the screening criteria, an additional sample will be obtained.

#### **3. Lateral Delineation of Centerline Samples and Vertical Delineation of Perimeter Samples**

The intent of the additional vertical sampling in the borings installed at the top of stream bank is to determine how deep COPCs may extend in these specific locations. We are not, at this time, proposing to perform additional sampling around these deeper sampling locations.

Similarly, the intent of the samples that may be collected beyond the current perimeter locations (those at the boundary of the flood plain) is to determine the horizontal extent of any COPCs that may exist. We are not, at this time, proposing to collect additional vertical samples from these locations. Rather, we can infer the maximum depth to which they may be present from the depth they are found in the perimeter sample.

#### 4. Detection Limits

In direct response to your question, yes, as the concentration of lead increases, the detection limit for arsenic will also increase. Therefore, in locations where lead concentrations greatly exceed the 400 milligram per kilogram (mg/kg) screening criterion, the detection limit for arsenic would be greater than the 20 – 25 mg/kg level cited. However, for two key reasons, this increase in the detection limit for arsenic will not represent a limitation on the use of XRF as a screening tool:

- a. Confirmatory samples will be obtained for any sample collected at a depth interval or horizontal location where we believe the screening criteria are achieved. We are not relying upon the results of the XRF analyses to complete our investigation, but rather we will use it to provide guidance on the locations and depths at which we will collect the samples for laboratory analysis to complete the investigation.
- b. If lead exceeds the screening criterion, an additional sample will be collected, regardless of whether the XRF results find arsenic at a level above its screening criterion. Therefore, the worst-case scenario is that lead would be detected with XRF at or slightly below its screening criterion, with arsenic present at a level greater than 8 mg/kg, but less than 20 mg/kg. In this case it is possible that we would not conclude that an additional sample was needed, and would send the sample to the laboratory, where it would be determined that the screening level for arsenic was not achieved. In this scenario, use of XRF would not have benefited us, but neither would it have resulted in a loss of information that would otherwise be collected.

I hope that the clarifications regarding our proposed sampling locations and how we intend to use the XRF for field screening is helpful to you in evaluating our proposals. If you have any questions, please call.

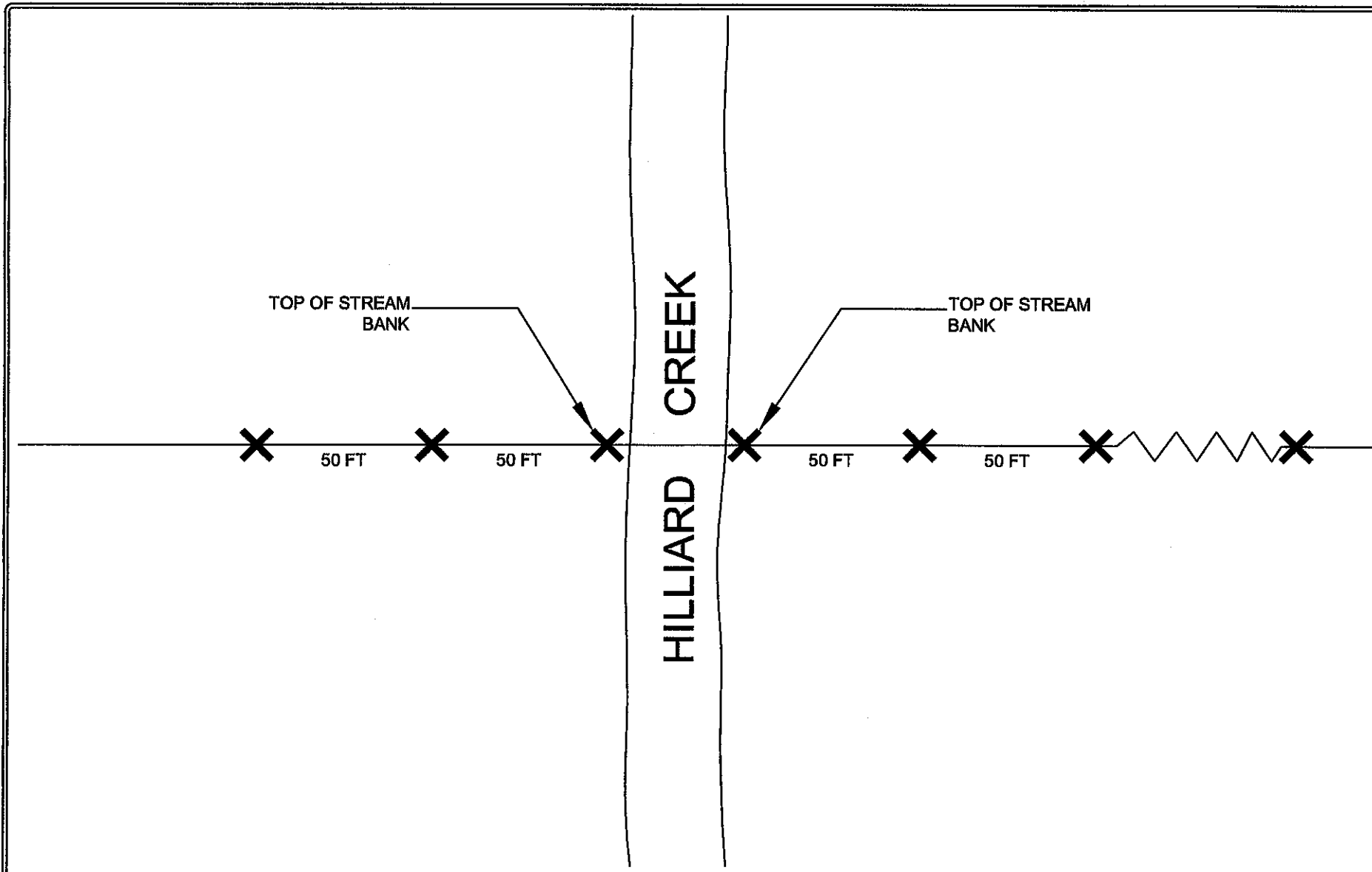
Sincerely,



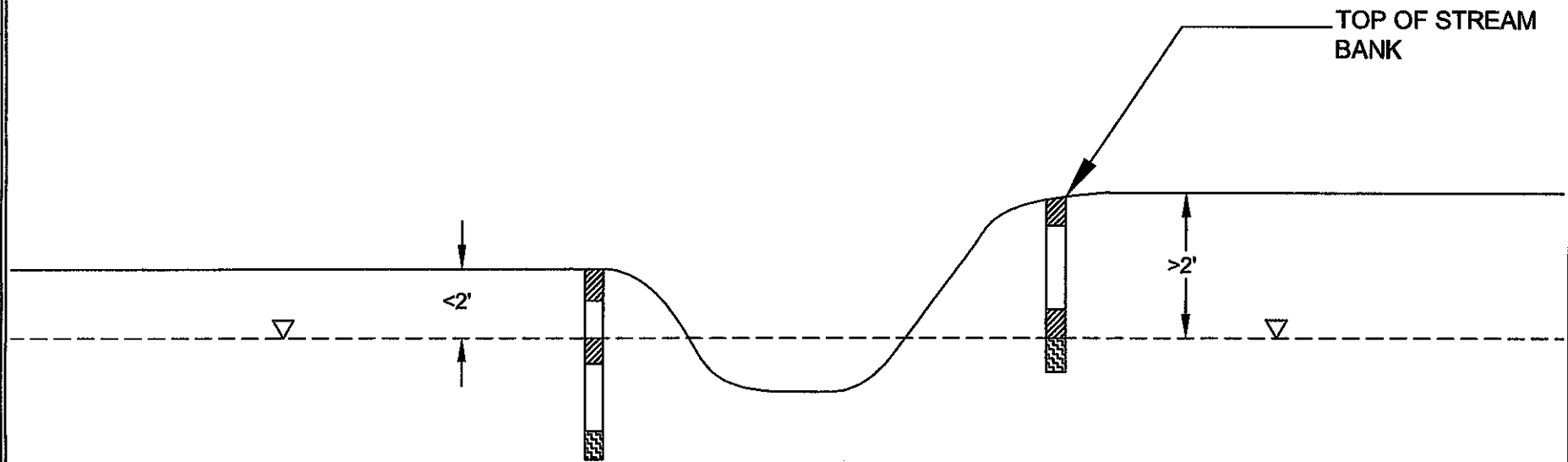
Mary Lou Capichioni  
Director, Remediation Services

Encl.

cc: J. Doyon, NJDEP (4 copies)  
L. Arabia, TetraTech FW, Inc.  
M. Pensak, USEPA (2 copies)  
H. Martin, ELM  
R. Mattuck, Gradient  
S. Jones, Weston  
S. Clough, Weston  
A. Fischer, Weston



<b>LEGEND:</b>  <b>X</b> - SAMPLE LOCATION TYPICAL TRANSECT		<b>TITLE:</b>  PROPOSED SAMPLE COLLECTION LOCATIONS PLAN VIEW	
<b>PROJECT:</b> Gibbsboro RI/FS		<b>DATE:</b> Mar 14 2006	
<b>CLIENT NAME:</b> Sherwin-Williams Company		<b>WESTON</b> SOLUTIONS	<b>FIGURE #:</b> 1



<b>LEGEND:</b> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, black 2px, black 4px); margin-right: 5px;"></div>         SAMPLE COLLECTED AS PER WORK PLAN       </div> <div style="display: flex; align-items: center;"> <div style="width: 15px; height: 15px; background: repeating-linear-gradient(-45deg, transparent, transparent 2px, black 2px, black 4px); margin-right: 5px;"></div>         ADDITIONAL VERTICAL SAMPLE       </div>		<b>TITLE:</b>  ADDITIONAL VERTICAL SAMPLE COLLECTION PROTOCOL	
<b>PROJECT:</b> Gibbsboro RI/FS		<div style="display: flex; justify-content: space-between;"> <div> <b>WESTON</b>  <small>SOLUTIONS</small> </div> <div> <b>DATE:</b>          Mar 14 2006       </div> <div> <b>FIGURE #:</b>          1       </div> </div>	
<b>CLIENT NAME:</b> Sherwin-Williams Company			